ABSTRACT

The present invention relates generally to computer operating systems, and more specifically, to operating system calls in a symmetric multiprocessing (SMP) environment. Existing SMP strategies either use a single lock or multiple locks to limit access to critical areas of the operating system to one thread at a time. These strategies suffer from a number of performance problems including slow execution, large software and execution overheads and deadlocking problems. The invention applies a single lock strategy to a micro kernel operating system design which delegates functionality to external processes. The micro kernel has a single critical area, the micro kernel itself, which executes very quickly, while the external processes are protected by proper thread management. As a result, a single lock may be used, overcoming the performance problems of the existing strategies.